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2 July 1970

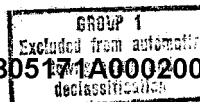
MEMORANDUM FOR: Chief, Research & Engineering Division, TSG/NPIC
SUBJECT : R&D Implications of IEG SITSUM Briefing of 29 June 1970

1. The following paragraphs are delineations of subjects that were discussed during the subject briefing which indicate the possible need for some Research and Development Support. At this point I do not know what the degree of interest is on these matters and, certainly, this would be one of the first points that we should determine. If it fits in with your scheme for the operation of the division, I would be glad to initiate discussions with Messrs. [] to determine the proper perspective for evaluating the significance of these R&D requirements.

2. Image Enhancement. [] discussed the publication of the Black Book which is reproduced in 40 copies for a very high level dissemination and is intended to be succinct disclosures of very significant intelligence finds. NPIC has the opportunity to contribute directly to this publication, but only if photographic materials upon which the intelligence find is based yields a lithographically reproduced copy which can without question be used to verify the reported intelligence. [] said that there are many times when the imagery is marginal and the information cannot be used for this publication. He asked whether or not there was a means whereby the original image could be enhanced for the lithographic reproduction so that NPIC could submit more of their intelligence finds for disclosure through this publication. If we determine that there is an appropriate level of interest by IEG and/or the Center management in this matter, I suggest RED head up a small task team to search out the facts in the case and determine the actual reproduction technique limitations. Once having done this, we can assess the possibility of providing or developing an enhancement technique that will serve the stated purpose. The task team needs membership of individuals who are qualified to search out the related policy limitations, the enhancement, and reproduction technology. If there is one man who can do this, he is all that is required.

3. Color Reproduction Technology. [] commented on his recent trip to [] and Westover. He commended the state of capability in the Westover operation and said that he was surprised at the relatively primitive techniques that [] must use in the processing of color imagery. He apparently was referring to the means for quality assessment and control of the end product. His remarks implied to me that he appreciated the need for Research and Development in this area.

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4. Photographic Enhancement. [] discussed recent imagery of the Middle East theater. He said that the imagery was degraded by sandstorms to the point that PIs considered it to be worthless. Additional film positives made on a special high contrasting emulsion, at the direction of [] on the Breakdown Team, proved to be suitable for some photo interpretation functions. This point refreshed my memory about the Image Enhancement Handbook that APED intends to publish and the fact that I believe it should be well coordinated with the imagery technologist serving in RED. I am particularly concerned that the PI may not be shown the trade offs that are characteristic of conventional (contrast manipulation) image enhancement techniques and that, whether or not they are furnished with several different kinds of copies of the material, they are taught to appreciate the type of copy which has the ultimate information potential.

5. Mensuration. [] described current difficulty in the process of measuring the lengths of submarines. I believe that the difficulty is caused by the very close color match that Soviet submarine hulls have to the sea. He asked whether or not RED had any suggestions for means to alleviate this problem. It appears to me

6. Director's Morning Briefing. [] mentioned the fact that between missions it is possible that some time would be available for the Director's Morning Briefing. He emphasized to TSG (RED) personnel that if they had any particularly significant or humorous disclosures to make, he would be glad to consider them for inclusion during some of these relatively slack periods. I believe this is an opportunity we should certainly make the most of. Here is a chance to develop some internal and external enthusiasm among all the right people.

7. Aircraft Readout Operations. We were briefed on the current state of the NPIC Tactical (aircraft) Acquired Reconnaissance--particularly that in Southeast Asia. We found that this operation appears to be gaining significance rather than losing it. During the past several months IEG has been reading out this material at the rate of over a 1,000 missions and 500,000 ft. of film per month. I asked [] if he expected this level of operation to continue through the 75 time frame. He said that, if anything, he expected it to increase. This is an excellent avenue for us to make a point about the utilization of the Dry Silver material. Another point that was made during this briefing is that the IRIS II (Optic Bar) camera was the only aircraft mounted camera which received an excellent interpretability rating by the NPIC PIs. This implies that this camera may be used to accomplish some national level requirements in the future. Little, if any, of our equipment is specifically designed for exploiting photography taken by this system. I think the 1540 Light Table is the only exception. It may be prudent to look into whether or not we should renew some equipment development projects specifically keyed to exploitation of IRIS II

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9. Color Briefing. The briefer reviewed most of the color situations that we are already familiar with. Among these was the fact that the IEG interpreters do not believe that color should be flown in operational missions at the expense of high resolution B&W imagery. There are FIs who favor an active color acquisition and exploitation system development program; however, they are in the minority. The briefer suggested that a more suitable means of developing a successful color program (assuming that one could be developed) would be to run a controlled experiment that was independent of the operational program. This sounds like a good idea and I suggested that we attempt to assume the leadership of such a program in coordination with the Red Dot Effort being run by CCS.

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Special Assistant for Plans & Applications, IEG

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